

REMARKS

I. Introduction

Claims 23 to 48 are pending in the present application. Claims 23 to 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yakura et al., U.S. Patent No. 5,539,241 (“Yakura”) in view of Blayo et al., U.S. Patent No. 5,739,909 (“Blayo”). Claims 38 to 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Blayo in view of Yakura, and in further view of Curran, U.S. Patent No. 5,126,284 (“Curran”). Claims 43 to 48 are allowed.

II. The rejection under 35 U.S.C. § 103(a) with respect to Claims 23 to 37 should be withdrawn

Claims 23 to 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yakura in view of Blayo. It is respectfully submitted that claims 23 to 37 are not rendered unpatentable for at least the following reasons.

Claim 23 relates to a device that includes at least one passive electronic component arranged on a structured surface layer of a sacrificial layer and in the shape of a coil for determining a physical measured quantity that is proportional to an extent of an at least locally etched lateral undercut of the structured surface layer.

Yakura purportedly concerns a method and structure for sensing temperature data of a batch or group of silicon wafers undergoing fabrication, in which a monitor wafer made from the same material and having the same configuration as the batch of silicon wafers is additionally configured with a closed loop or spiral segment on its surface so that when included with the batch of wafers being processed, one or more coils of a transformer structure may be brought into operative relation with the closed loop or spiral segment structure in order to periodically measure the temperature of the monitor wafer. (See Yakura, Abstract; col. 1, lines 9 to 14; col 3, lines 28 to 49). Due to the similarity between the monitor element and the silicon wafers being processed, the temperature measurement taken from the monitor device is considered to be also accurate for the silicon wafers being processed. (See Yakura, col. 2, lines 22 to 25). In this regard, the closed loop or spiral segment does not determine **a physical measured quantity that is proportional to the extent of an at least locally etched lateral undercut of a structured surface layer of a**

sacrificial layer. Indeed, Yakura does not mention an undercut all -- lateral, etched, an extent thereof or otherwise. In fact, the closed loop or spiral segment of Yakura is not even disclosed as arranged **on a structured surface layer of a sacrificial layer.** Accordingly, for at least these reasons, it is clear that Yakura does not disclose at least one passive electronic component arranged on a structured surface layer of a sacrificial layer and in the shape of a coil for determining a physical quantity that is proportional to the extent of an at least locally etched lateral undercut of the structured surface layer, as recited in claim 23.

Blayo purportedly concerns a method of in-situ process control for the etching of periodic features using spectroscopic ellipsometry. (See Blayo, col. 2, lines 46 to 49). As explained in Blayo, ellipsometry is based on phase and amplitude changes that occur when a beam of polarized light is reflected from a medium. These changes are different for incident radiation with its electric vector oscillating in the plane of incidence compared to the electric vector oscillating perpendicular to the plane of incidence. Ellipsometry measures the results of these two changes which are conveniently represented by an angle Delta (Δ), which is the change in phase of the reflected beam from the incident beam, and an angle Psi (Ψ), which is defined as the arc tangent of the amplitude ratio of the incident beam. (See Blayo, col. 2, lines 8 to 21). In this regard, Blayo discloses controlling the etching of the periodic features by making Δ and Ψ comparisons between a known reference structure and a sample structure. (See Blayo, Abstract). It is clear that Blayo does not disclose at least one passive electronic component arranged on a structured surface layer of a sacrificial layer and in the shape of a coil for determining a physical measured quantity that is proportional to an extent of an at least locally etched lateral undercut of the structured surface layer, as recited in claim 23. Indeed, the Office Action merely asserts that “Blayo teaches an etched undercut,” (Office Action, at p. 2), which clearly fails to address all of the limitations of rejected claim 23.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed.

Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

As indicated above, the combination of Yakura and Blayo fails to identically disclose all of the limitations of claim 23, in particular, at least one passive electronic component arranged on a structured surface layer of a sacrificial layer and in the shape of a coil for determining a physical measured quantity that is proportional to an extent of an at least locally etched lateral undercut of the structured surface layer. Accordingly, even if it were proper to combine the Yakura and Blayo references as suggested (which is not conceded), it is respectfully submitted that such combination does not render claim 23 unpatentable.

It is also respectfully submitted that the Office has not demonstrated a reasonable expectation of success that the Yakura and Blayo references may be combined to yield an equivalent device as recited in claim 23. In particular, it is unclear how the closed loop or spiral segment of Yakura that measures temperature could be successfully combined with a device that measures phase and amplitude changes of polarized light. Indeed, it is unclear how such devices could be successfully combined at all. Accordingly, it is respectfully submitted that claim 23 is not rendered unpatentable for these further reasons.

With respect to the Examiner's assertion that "it would have been obvious to one of ordinary skill in the art to incorporate the etched later undercut of Blayo in the Yakura semiconductor device," the case law and M.P.E.P. § 2143.01 make clear that a conclusory statement asserting that combining or modifying the references would have been within the ordinary skill of the art at the time the claimed invention was made does not establish a prima facie case of obviousness without further objective supporting reasons. Indeed, merely stating that "methods to generate sub-micron features typically employ plasma etching," as asserted by the Examiner, is not a proper objective supporting reason. In this regard, the Office Action's asserted suggestion to combine the Yakura and Blayo references is plainly based on nothing more than hindsight reasoning. In rejecting a claim under 35 U.S.C. § 103, Applicant's invention "*must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.*" Indeed, the Office Action does not even assert that it would have been obvious at the time the invention was made to make such a

combination. Accordingly, combining these prior art references without evidence of a proper suggestion, teaching, or motivation "simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability -- the essence of hindsight." In re Dembicza, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999).

Moreover, the cases of In re Fine, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988), and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make clear that the Office Action's generalized assertions reflect a subjective "obvious to try" standard, and therefore do not constitute proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1600 (citations omitted; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943 & 1944 (citations omitted; italics in original).

That is exactly the case here, since the present Office Action offers no evidence, but only conclusory hindsight, reconstruction and speculation, which the above cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper

evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a “technologically simple concept” -- which is not the case here -- there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab’s invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

Accordingly, it is respectfully submitted that there is no evidence that the references relied upon, whether taken individually or in combination, would provide the features and benefits of claim 23. It is therefore respectfully submitted that claim 23 is allowable for at least these reasons.

As for claims 24 to 37, which ultimately depend from claim 23 and therefore include all of the limitations of claim 23, it is respectfully submitted that claims 24 to 37 are allowable for at least the same reasons that claim 23 is allowable. Applicants therefore respectfully request that the rejection of claims 23 to 37 be withdrawn.

III. The rejection under 35 U.S.C. § 103(a) with respect to Claims 38-42 should be withdrawn

Claims 38 to 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Blayo in view of Yakura and further in view of Curran.

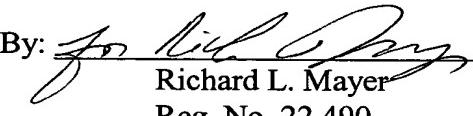
It is respectfully submitted that even if it were proper to combine the references as suggested (which is not conceded), the Curran reference does not cure the deficiencies of the Yakura and Blayo references (as explained above) with respect to claim 23, from which claims 38 to 42 ultimately depend. Indeed, the Office Action does not allege that it does. Accordingly, it is respectfully submitted that dependent claims 38 to 42 are allowable at least for the same reasons that claim 23 is allowable. Withdrawal of the rejection of claims 38 to 42 is therefore respectfully requested.

Conclusion

In light of the foregoing, Applicants assert that the present invention is new, non-obvious, and useful. Furthermore, all issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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